NOTE XIV.

ON THE ZOOLOGICAL RESEARCHES IN WEST AFRICA.

DIRECTED BY

H. SCHLEGEL.

I.

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It has always been my opinion that the true science of zoology is entirely based upon an exact and detailed knowledge of those types in nature to which we are in the habit of applying the term *species* and *conspecies* and upon our acquaintance both with the constant varieties and with the individual variations of the species. Indeed the science of zoology lays claim to its full dignity only when it is considered as a subdivision of the immense domain of physical geography.

These considerations naturally lead to the conclusion that zoological science can only be thoroughly studied in those central collections which contain the greatest possible number of species. Each of these species must there be represented by complete series of perfect specimens, illustrative of all the different phenomena consequent upon difference in age or sex of the individuals, upon difference in season, locality, variety, variation, etc. [1])

1) The term "series" in the sense which I give to the word must not be confounded with mere accumulations of specimens, bearing none of the characters above mentioned.

To obtain these no time must be lost; many species of animals are daily diminishing in number, especially by the influence of man, and will sooner or later become entirely extinct, whereas others are reduced to a small community which often emigrates to the untrodden wilds of the interior, from whence it is very difficult to obtain them. Not only are they rarely captured but their transport to the nearest harbour often is very troublesome and expensive, nay, very often impracticable. And so it becomes a duty to naturalists to try and secure specimens of those types that are for ever disappearing from the surface of the earth. Then at least they will have the satisfaction to be able to show and to study be it only the dead relics of a creation, the harmony of which has already been disturbed in manifold ways by the thoughtless tyranny of man himself. It has even now become difficult to recognize the original plan of creation in its full extent. [1])

Being myself occupied since many years with the foundation and gradual development of an establishment answering to the above definition, at the same time the central Museum for the kingdom of the Netherlands, I started from the principle that such an institution would be greatly benefited and gradually claim superiority over the greater number of existing zoological Musea, if its collections could be enriched by the results of very thorough researches made in certain more or less restricted localities by men of sufficient scientific training and during a period which should be long enough for a throurough exploration and for the collecting of numerous specimens of every species.

The liberal way in which the Government of the Ne-

1) It is hardly necessary to remind that these observations have a special bearing upon the mammals and birds, which in consequence of their higher organisation are placed at the head of creation and must occupy the first rank in Musea. Their capture requires the greatest expense, their preservation and study perfect knowledge.

therlands has hitherto supported this system of zoological explorations is universally known. However, it was only carried out with considerable interruptions, which are a great impediment to the successful application of the system. In order to avoid these I formed the project of organizing, for the benefit of the Museum, a private expedition which was to explore in the way above indicated, different parts of Western Africa. A few years ago Dr. F. Pollen had set the example by his zoological explorations in Madagascar.

The members of the present expedition are J. Büttikofer and C. Sala. The former, who was my assistant at the Museum, offered to be the scientific leader of the expedition for which he possesses all the capacities required; the second an experienced traveller, who passed a number of years in Java and Angola is at the same time an accomplished sportsman and collector.

The equipment of the expedition was carefully superintended by myself. A long experience gained by the numerous expeditions which I have seen depart from our Museum in the course of this century has taught me to arrange this in a way which proves to be most convenient to the travellers. They were moreover furnished by Government with ample recommendations to the different consuls and shipped in November 1879 for Liberia in a vessel belonging to the Rotterdam firm of Hendrik Muller and Son. The facilities granted to the expedition by this gentleman, as well as his recommendations to his different agents proved to be of the greatest service. Thanks to the cares of Consul Modderman and Vice Consul Wiegmann the travellers were able to make excursions both into the interior and along the coast. Through the kind intercession of these gentlemen the Liberian Government exempted them from paying duty upon the implements imported; here as in the United States of North America science appears to take its place at the head of man's occupations. The members of the Liberian cabinet showed

great interest in the expedition and provided our travellers with new recommendations, whereas from Mr. Anderson who has made several voyages throughout Liberia and the neighbouring countries and published a report upon these, they obtained much valuable information.

After a short sojourn at Monrovia our travellers proceeded upon their journey, following the Mensurado River in a canoe as far as the creek which unites it to the St. Pauls River, and then following the latter river till they had reached their first station at the rapids, which are situated no more than one third of a degree from its mouth. Here they were very kindly received by the reverend Mr. Day and his lady, an English missionary stationed at Millsburg, whose interest in the expedition proved to be of invaluable service during the whole time the travellers stopped on the banks of the St. Paul.

From Millsburg they proceeded to Bavia, four hours' march higher up the banks of the river and after as hort stay, continuing along the right bank of the St. Paul, they reached Soforé after a full day's march.

From this point numerous and distant excursions were made in all directions, in a primeval forest region only traversed by narrow footpaths. Though neither suffering much from fever nor from mosquitoes the rainy season ruled during the whole summer with such uncommon force and perseverence that collections could hardly be formed under such circumstances. Undoubtedly this would have decided them to leave the place as soon as possible but for the astute cunning of the natives who refused to procure them either food or carriers, thus retaining them in a sort of captivity in order to be better able to rob the travellers of anything they could lay hold of during the time the latter were out on their shooting excursions.

At last they were fortunately delivered out of this untenable position by the efficient measures of Mr. Day and so could return to Monrovia from whence they have sent a first consignment of natural history collections to Europe.

Notwithstanding all these unfavourable circumstances the collections contain several valuable and interesting objects. I shall not enumerate all but merely mention some of the more interesting or rare species.

Amongst the mammals I hailed with satisfaction three beautiful specimens of the true *Colobus ursinus*, exactly similar to the specimen from Sierra Leone figured by Fraser. It is now definitely proved by these specimens that *Colobus ursinus* differs constantly from *Colobus vellerosus*, which inhabits the Gold Coast, thus corroborating my statements about these two species in the «Monographie des Singes" which I published a few years ago. Another interesting curiosity of the collection is a young but very beautiful specimen of *Cephalophus doria*, together with the head of a somewhat older female of the same species. New to science are a species of squirrel (*Sciurus salae* Jentink *vide infra*) and a genus of Pteropi without claws on the index fingers (*Leiponyx büttikoferi* Jentink). The travellers met with only one specimen of *Hippopotamus liberiensis*, which however had been caught by the negroes and had been cut into pieces before their arrival. *Hyaemoschus aquaticus* although spread over the woods could not be captured; *Potamogale* appears to be entirely unknown in the country.

Of the birds the following present more particular interest. *Agapornis swinderiana* occurs in small numbers and lives in the crown of the trees. *Psittacus timneh* is the only larger parrot in the country, representing without exception the common species *Psittacus erythacus*. A single female specimen of a true sparrow-hawk which shows exactly the same character as the male (type of *Nisus erythropus* of the Leyden Museum) proves that this species constantly differs from *Nisus minullus*. Only one specimen was procured of *Columba unicincta* Cassin, the type of which was captured by du Chaillu on the Ogoway and is now in the Philadelphia Museum. Of the beautiful *Columba iriditorques* Cassin, also discovered by du Chaillu there are only a few specimens. Of the genus *Centropus*

one specimen was secured, which belongs to the rare species *Centropus francisci*. A fine series of the small *Glareola nuchalis* was collected, which up to the present day was only known from a single specimen killed on the banks of the Upper Nile. However all the specimens collected in Liberia have a rufous instead of a white collar, for which reason I shall designate them by the name of *Glareola nuchalis liberiae*. Eight species of Hornbills inhabit the country, and among them are the two rare and interesting species which I have formerly described as *Buceros pulchrirostris* and *B. nagtglasii*. A fine series of *Buceros semifasciatus* furnishes the ultimate proof that this species cannot be confounded with *Buceros fasciatus*, as has been proposed by certain modern ornithologists.

The present note is intended to serve as an introduction to the description of the new or interesting animals for which we are already indebted to our collectors.

An extract of Mr. Büttikofer's Journal of this first year's work in Liberia will be published in the Journal entitled "Tijdschrift van het Aardrijkskundig Genootschap te Amsterdam."

The duplicates in the collections both of the mammals, birds and some of the other classes of animals have been exclusively intrusted for sale to the well-known firm of Mr. W. Schlüter at Halle.

H. SCHLEGEL.